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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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11/10/2005

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EXAMINER

SUCHFIELD, GEORGE A

ART UNIT

PAPER NUMBER

3676

DATE MAILED: 11/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/705,421

Applicant(s)

HAO ET AL.

Examiner

George Suchfield

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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1. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

3. The abstract of the disclosure is objected to because it is not limited to a single paragraph and exceeds 150 words in length. The abstract further appears to include myriad idiomatic/technical errors, such as the "sentence" in line 4 of "So as to make them react each

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other and produce chlorine dioxide"; in line 10, it is not clear what comprises a "crack well".

Correction is required. See MPEP § 608.01(b).

4. 35 U.S.C. 112, first paragraph, requires the specification to be written in "full, clear, concise, and exact terms." The specification is replete with terms which are not clear, concise and exact and/or replete with idiomatic errors. The specification should be revised carefully in order to comply with 35 U.S.C. 112, first paragraph. Examples of some unclear, inexact or verbose terms used in the specification are: "complex systems engineering relating to various knowledge" and "but it is less effective, even though no effective" (page 1). Note also the recitation "lots of fields and research institutes also did lots of work on block-removing by way of chlorine dioxide" (page 2, lines 3 and 4), and the recitation in page 10 of "However, there were no any effects".

It is further noted that in page 6, last line, the term "sodium chloride" should be -- sodium chlorate -- since a chlorate component is called for throughout the specification.

Also with respect to page 6, applicant's reference to an expansion-preventing agent, i.e., a component to prevent the expansion of swelling of clay, as comprising either potassium chlorate or ammonia chlorate is questioned. It appears applicant is referring to conventional clay anti-swelling agents, most exemplary of which include potassium chloride or ammonium chloride (note Nooner et al (3,543,858); Son et al (4,526,693)). While the examiner cannot assert that the former compounds would not inhibit clay swelling, applicant is requested to review the specification/disclosure and/or verify whether, e.g., potassium chloride or potassium chlorate comprises the conventional(?) clay anti-swelling agents for use in applicant's invention.

In page 8, the recited formula is deemed incomplete and unclear insofar as the identification/description of “r” is not provided while two different descriptions of the symbol “R” are set forth.

In page 9, it is further not understood what is intended by the term “mean chlorates”; moreover, the species “sodium chlorite” obviously comprises a “chlorite” rather than a “chlorate”.

5. In order to correct the technical deficiencies and idiomatic shortcomings of the specification, e.g., as noted above in Para 4), applicant may wish to submit a substitute specification, in proper idiomatic English and in compliance with 37 CFR 1.52(a). Such substitute specification filed must be accompanied by a statement that it contains no new matter.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is deemed inconsistent, and therefore indefinite, with respect to steps a and d. More specifically, step d requires the chlorine dioxide to be synthesized in the well by reaction “between the chlorates and the acidic substances”. In step a, however, it is recited that the solution provided by tank 1 can be merely “stable chlorine dioxide and water”. Hence, it appears then that the reaction set forth in step d would simply not occur without the chlorate component. Thus, clarification and/or amendment is required. Claim 1 is further indefinite with respect to the recitation in line 4 of step d of “oil(water) well”.

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Claims 2-12 are similarly rejected insofar as they depend from claim 1.

In addition, claims 5 and 7 are deemed further indefinite in being drawn to improper Markush groupings. As noted in MPEP Section 2173.05(h), the use of a term such as "comprising" or "include" is improper in setting forth the Markush grouping. Accordingly, in lines 1-4 of each of these claims, the occurrences of "include" must be changed to -- is selected from the group consisting of -- or -- is -- .

Also, while not indefinite per se, it is noted claim 10 may be inaccurate, as noted above in Para 4) with respect to the clay anti-swelling agent.

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The cited references include processes for generating chlorine dioxide for industrial use and/or for the treatment of wells. Also disclosed are use of conventional well treatment components, such as corrosion inhibitors and clay anti-swelling agents, which may be used in admixture with chlorine dioxide for well treatment.

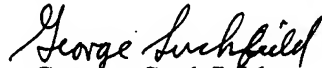
9. Claims 1-12 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Suchfield whose telephone number is 571-272-7036. The examiner can normally be reached on M-F (6:30 - 3:00).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Glessner can be reached on 571-272-6843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


George Suchfield
Primary Examiner
Art Unit 3676

Gs
November 8, 2005